

## **Effects of *Ichthyophonus* on survival and reproductive success of Yukon River Chinook salmon**

**Abstract:** Studies confirmed that 16-28% of Yukon River Chinook salmon enter the river infected with *Ichthyophonus*. Infection prevalence remained constant until fish reached the upper Yukon at Dawson and Whitehorse where it dramatically dropped to 10% or less. Clinical signs of disease were minimal (4.3% among males and 8.5% among females) when fish entered the river, but increased to 17.9% (males) - 24.1% (females) when fish reached Rampart Rapids at river-mile 745. There was little difference in prevalence of infection in fish from the early part of the run compared to fish from the end of the run; however, in fish from the end of the run, the parasite was disseminated and clinical disease was apparent. Infection and disease prevalence rates in fish from the Tanana River and the mouth of the Chena River were similar to those in the Yukon River. However, female spawn-outs collected from the upper Chena River showed no evidence of *Ichthyophonus* infection. This dramatic decrease in infection prevalence in females is similar to that seen at Whitehorse in 2000 and 2001. Males showed a slight decrease in infection prevalence at Whitehorse and the Chena River. Elevated river temperatures within and among years may be an important cause of increased disease among Yukon River Chinook salmon.

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